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September 9, 2014

Frank H. Willman, PE
Waste Management
271 Madison Ave S Suite 201
Bainbridge Island WA 98110

RE: 2013 Riverbend Annual Environmental Monitoring Report
Yamhill County SWDP #345

Dear Mr. Willman:

We have reviewed the 2013 Annual Environmental Monitoring Report (AEMR) for the Riverbend Landfill, which was received on April 29, 2014. This AEMR was prepared by SCS Engineers for Waste Management of Oregon, Inc. Thank you for your timely submittal.

The permit-required groundwater monitoring was conducted twice in 2013, during the spring and fall quarters, in accordance with the facility Environmental Monitoring Plan. Consistent with historic results, low levels of three volatile organic compounds (VOCs) were detected in Monitoring Well MW-5A, detection well adjacent to the landfill. There were no confirmed exceedances of three or more site specific limits at any compliance well.

On June 10, 2014 Waste Management submitted an update to the Riverbend Landfill Environmental Monitoring Plan (EMP) to address comments detailed in our March 2014 letter of approval. The Department will be finalizing our review of the EMP update soon.

The new EMP will be the tool used to determine if environmental monitoring conducted at Riverbend Landfill is in compliance with their permit. Concentration limits for various compliance wells were proposed on the new EMP. These limits are approved, and will be included in an upcoming permit addendum after the Department finishes reviewing the EMP update. Monitoring in 2014 should comply with the 2013 EMP and all conditions of that plan.

Monitoring highlights of the 2013 Report

- A split-sampling event was held with DEQ in April. This was also a 5-year comprehensive monitoring event.
- No VOCs were found in samples collected from MW-5B, the deeper companion well to MW-5A.
- Monitoring data from the former leachate treatment area (poplar farms) indicated continued increasing trends for inorganics in wells MW-19A and MW-20A. Some of these levels were greater than secondary standards and exceeded previously established limits. The poplar farms at Riverbend Landfill are no longer irrigated with leachate.
- Verification resampling was conducted at MW-15A and MW-21A on January 2013. There results did not confirm a potential change of groundwater quality (originally noted in 2012).
- MW-12A data indicate that nitrate levels in the groundwater of that area have significantly increased, and this increase has been sustained since 11/2012. SCS indicated (personal communication) that the levels of nitrate in MW-12A decreased during the second quarter sample event of 2014.

- The anion-cation balances for the groundwater monitoring wells were all less than +10%, with the exception of the April sample from MW-16 (16%) and the November sample from MW-15A (24%.)
- During the installation of new leachate conveyance piping, a release of leachate occurred south of Module 2 in October 2013.
- No VOCs were detected in the liquid samples collected from the landfill leachate secondary collection system (LSCS) sumps, while multiple VOCs were present in the leachate from the primary leachate collection sumps.
- 19.28 million gallons of leachate, liquids from the site's gas collection and control system and rainwater was pumped from the lagoon and transported the Hillsboro Clean Water Services wastewater treatment facility.
- The liquid collected from the leachate pond leak detection system was consistent in quality with the leachate contained in the pond. Riverbend Landfill contracted an engineering firm to assess the lagoon liner integrity.
- Landfill gas pump PGP-05 was decommissioned for MSE berm construction reasons, as were piezometers P-04A and P-04B. Eleven new vertical gas collection wells were installed.
- Methane was not detected in any of the facility structures or at any compliance landfill gas probes.
- Waste Management conducted non-required surface water monitoring at two locations of the Yamhill River, in April and May.

Comments on the Report

Page ix and Page 1.
The report indicated that monitoring and reporting were performed consistent with section 16.2 of the solid waste permit. Section 16.2 of the permit is a brief statement about groundwater discharges. We assume this reference should be all of section 16 of the permit rather than just section 16.2.

Table 3-1.
We appreciate your updating this table; and have noted that MW-8A and MW-8B not listed. Please include the information regarding these (former) wells in future reports. We believe these wells were decommissioned and you can include a footnote to the table stating the date and reason they were removed.

Table 5-1, foot note e, typo.
This note says well MW-20B will be sampled annually in the spring. Presumably, this note was intended to say the well was sampled. Please correct in future annual reports.

Table 6-11, gas measurements in buildings.
The table lists results for three buildings: the office, scale house, and maintenance building. The *Landfill Gas Monitoring Plan* (SCS Engineer, July 30, 2012), section 4.1.4, lists five buildings for which gas will be monitored. These include these three buildings plus the LFGTEF facility and the former GCCS building. Why are results not presented for the LFGTEF facility and the former GCCS building?

Groundwater elevations.
The 2013 water level elevations for GT-10-11 and GT-10-1 were not available in the report; however the EMP indicates these data would be included in future reports.

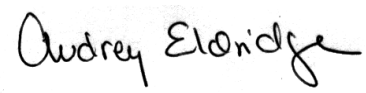
Groundwater mound at P-07A.
There is an unusual groundwater mound around the newly installed piezometer P-07A. We understand that RLC resurveyed the reference elevation for P-07A, to confirm the accuracy of the measuring point. This information should be included in the next AEMR.

Effect of this letter

This AEMR documents compliance with the Riverbend Landfill Environmental Monitoring Plan and the solid waste landfill permit. The monitoring of Riverbend Landfill did not indicate any significant change in groundwater quality at the compliance wells during 2013. Some of the detection wells around the Poplar Tree Farm continue to exhibit groundwater impacts, likely originating from the application of leachate as part of the irrigation water applied to the poplars. This application has been discontinued and groundwater quality is expected to improve.

If you have any questions regarding the information contained in this letter, please contact me at (541)776-6029, or via e-mail at eldridge.audrey@deq.state.or.us.

Sincerely,



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